

Flammable ContainmentDescription

This project consists of two methods of preventing sewer flammability.

The first method is to install automatic separation equipment on all vessels that now use manual separations. This will minimize the potential for operator error.

The second system will prevent accidentally sewerred flammables from leaving the department sewers, thus protecting other areas of the plant. All the sewers of Dept. 247 will be routed to a concrete sump. From there, they will be pumped to a horizontal, continuous separator. The light organics will overflow to a small tank. From there it will either be returned to the process or pumped to the ketone still bottoms tank. The water will underflow to another small tank that will be continuously monitored to detect flammability. If the material is not flammable it will drain to the main plant sewer.

The proposed location of this secondary system is west of the department. The scooter shed will have to be relocated.

Background and Need

The sewers at the south end of Falling Springs Road have had a long history of explosions and fires. It is believed that flammables from Dept. 247, Hydrogenations, are partially responsible. Also, the platinum catalyst used in Dept. 247 is pyrophoric when dry and is a potential ignition source for a flammable sewer.

Flammables (ketones, carbinols, and xylene) and catalyst can reach the sewer due to an error in normal operations or because of equipment failure. Many water/ketone separations are made in the department. Presently, some separations are automatic and others are done manually. If the automatic equipment fails to operate correctly, a large amount of ketone could be sewerred. Also, if a manual separation is not closely watched, flammable material will be sewerred. Due to the large amount of old equipment in the department, there are frequent pump and piping leaks that can result in a large amount of flammables reaching the sewer.

This project will provide necessary safety precautions to minimize the potential for sewer fires and explosions in Dept. 247 and surrounding departments.

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